

Claims

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A telecommunication system comprising:-

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- a system TDM interface comprising means for receiving and transmitting TDM data streams;
- a system packet communication interface comprising means for receiving and transmitting data packet streams; and
- 10
- a format converter comprising means for performing bi-directional conversion between the interfaces.
- 2.
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- A system as claimed in claim 1, wherein the format converter comprises a TDM bus connected to the TDM interface and a packet bus connected to the packet communication interface and a conversion means connected between the two buses.
- 3.
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- A system as claimed in claim 2, wherein the conversion means comprises at least one service-specific adaptation module.
- 4.
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- A system as claimed in ^{claim 1} ~~any preceding claim~~, wherein the system further comprises a system controller comprising means for controlling operation of circuits in the system.
- 5.
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- A system as claimed in claim 4, wherein the system controller is connected to the packet bus.
- 6.
- A system as claimed in claim 4 ~~or 5~~, wherein the system controller comprises means for transmitting and receiving system control signal via the packet bus to the packet communication interface and the format converter, and means

for transmitting and receiving system control signals to the TDM interface via a separate TDM control signal link.

5 7. A system as claimed in claim 6, wherein the control signals are cells such as ATM cells.

8. A system as claimed in claim 7, wherein the system packet communication interface and the format converter comprise means for adding an additional header to each cell to direct routing of the cells within the system.

10 9. A system as claimed in ^{claim 3} ~~any of claims 3 to 8~~, wherein each adaptation module comprises a cell processor connected to an adaptation circuit.

15 10. A system as claimed in claim 9, wherein each adaptation module further comprises a control processor, and the cell processor comprises means for routing control signal cells to the control processor.

20 11. A system as claimed in claim 10, wherein the cell processor routing means comprises a segmentation and reassembly interface connected to a separate segmentation and reassembly circuit, which is in turn connected to the control processor.

25 12. A system as claimed in claim 11, wherein the cell processor comprises means for stripping additional headers from cells as they are routed to the segmentation and reassembly circuit.

30 13. A system as claimed in ^{claim 9} ~~any of claims 9 to 12~~, wherein the cell processor comprises means for maintaining a plurality of output queues for routing of cells to the TDM bus, the queues being maintained on a priority scheme according to VPI/VCI headers.

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14. A system as claimed in claim 13, wherein each cell processor comprises a mapping function for addition of the additional headers

15. A system as claimed in ^{claim 9} ~~any of claims 9 to 14~~, wherein the cell processor comprises a dedicated ASIC.

16. A system as claimed in ^{claim 1} ~~any preceding claim~~, wherein the system packet communication interface further comprises a control processor, and the cell processor comprises means for routing control signal cells to the control processor.

17. A telecommunication system comprising:-

a TDM interface comprising means for receiving and transmitting TDM data streams;

an ATM interface comprising means for receiving and transmitting ATM data streams;

a format converter comprising a TDM bus connected to the TDM interface, an ATM bus connected to the ATM interface, and at least one service-specific adaptation module connected between the busses; and

a system controller.

18. A system as claimed in claim 17, wherein the system controller is connected to the ATM bus and comprises means for communicating with the ATM interface and each adaptation module using cells.

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19. A system as claimed in claim 18, wherein each adaptation module and the ATM interface comprise means for routing control signal cells with additional headers for internal routing.

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